**MonPE30**

# Development of a Long-Slot Microwave Plasma Source

Yusuke Kuwata, Toshiro Kasuya and Motoi Wada

*Graduate School of Science and Engineering, Doshisha University, Kyotanabe, Kyoto 610-0321, Japan*

*Corresponding Author: Yusuke Kuwata, e-mail address:euo1304@mail4.doshisha.ac.jp*

A rectangular-shape microwave source capable of producing uniform plasma has been being developed for charge neutralization and ion beams extraction. A long rectangular plasma source has been already developed [1], but this type of plasma source utilizes a complicated geometry to achieve coupling of microwave power into the produced plasma. A plasma source with the simple structure shown in Figure 1 has been proposed to extend maintenance interval for use in semi-conductor production environment. It has two antennas movable in the direction to change the spacing between the chamber wall and the antennas. Electron temperature and density distributions of the produced plasmas are investigated for different antenna positions and permanent magnet arrangements.

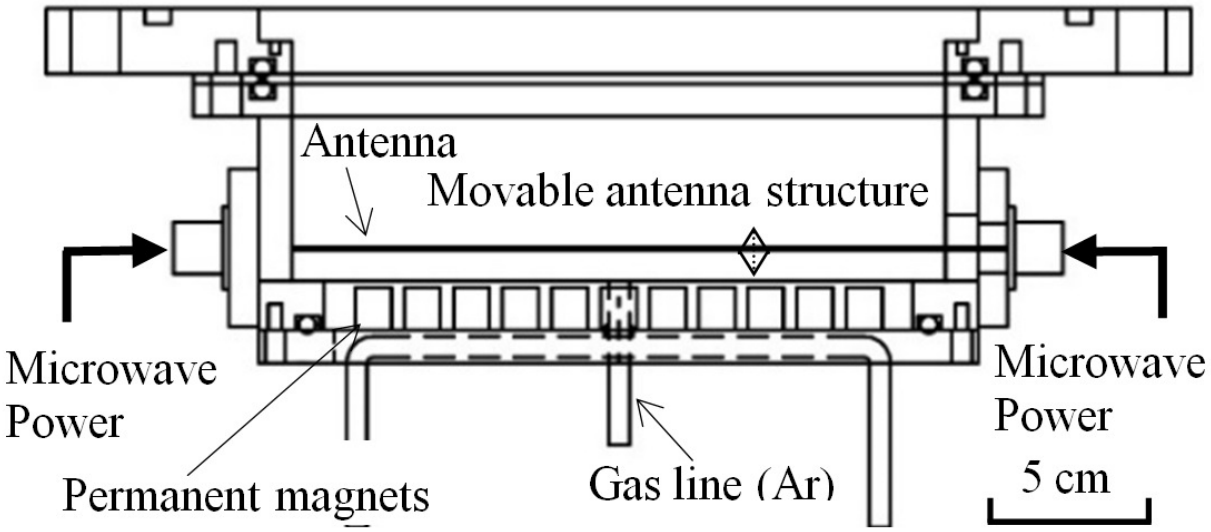


Fig.1. Cross section of the rectangular plasma source.

**Reference**

[1] T. Yasui, K. Nakase, H. Tahara and T. Yoshikawa: J. Appl. Phys. Vol. **35** (1996) 5495.